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REMARKS

The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks.

35 U.S.C. §103(a) Rejection – Garito, LoCascio and Moulton

The Examiner has rejected claims 32-43, 45-50, 53-54 and 56-62 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,876,796 issued to Garito et al. (hereinafter "Garito") in view of U.S. Publication No. 2003/0016907 issued to LoCascio et al. (hereinafter "LoCascio") and further in view of U.S. Patent No. 5,774,489 issued to Moulton et al. (hereinafter "Moulton"). The Applicants respectfully submit that the present claims are allowable over Garito, LoCascio and Moulton.

Applicants respectfully submit that Garito, LoCascio and Moulton should not be combined, since there is no teaching or suggestion to combine these references, let alone in the very specific way the Examiner has proposed and relied upon in the Office Action. Furthermore, modifications not taught or suggested in the prior art it seems may be necessary to make the combination of these references proposed by the Examiner. Accordingly, Applicants respectfully submit that these references should not be combined.

Furthermore, the present claims appear to be allowable over any combination of Garito, LoCascio and Moulton.

Claim 32 pertains to an apparatus comprising:

*"a silicon substrate;
a microresonator disposed on the silicon substrate, the microresonator having an annular structure to recirculate light at a desired wavelength, the microresonator including nanocrystals in a matrix; and
an LED disposed vertically relative to the microresonator to excite recirculation of light in the microresonator;*

*at least one patterned waveguide disposed above the microresonator, wherein light may be coupled between the microresonator and the at least one patterned waveguide;
a thickness of a film between the at least one patterned waveguide and the microresonator and between the LED and the microresonator; and
a CMOS circuit on the silicon substrate”.*

As understood by Applicants, Garito, LoCascio and Moulton do not teach or suggest these limitations. In particular, Garito, LoCascio and Moulton do not teach or suggest in combination with the other claim limitations: (a) an LED disposed vertically relative to the microresonator; (b) patterned waveguide disposed above the microresonator; (c) a thickness of a film between the at least one patterned waveguide and the microresonator and between the LED and the microresonator; and (d) a CMOS circuit on the silicon substrate.

Accordingly, claim 32 and its dependent claims are believed to be allowable over Garito, LoCascio and Moulton.

Claim 45 pertains to an apparatus comprising:

*“a silicon substrate;
a microresonator disposed on the silicon substrate, the microresonator having an annular structure to recirculate light at a desired wavelength, wherein the microresonator includes silicon nanocrystals, silicon-germanium nanocrystals, or a combination thereof;
a patterned waveguide disposed above and optically coupled with the microresonator, wherein a distance between the waveguide and the microresonator is equal to or less than 250 nanometers; and
an LED disposed above the microresonator to excite circulation of light in the microresonator, wherein the LED emits light at a wavelength that is less than 900 nanometers;
a film disposed between the patterned waveguide and the microresonator, the film having a thickness to adjust an amount of coupling between the patterned waveguide and the microresonator; and
a CMOS circuit on the silicon substrate”.*

As understood by Applicants, Garito, LoCascio and Moulton do not teach or suggest these limitations. In particular, Garito, LoCascio and Moulton do not teach or suggest in combination with the other claim limitations: (a) a microresonator that includes silicon nanocrystals, silicon-germanium nanocrystals, or a combination thereof; (b) a patterned waveguide disposed above and the microresonator and that a distance between the waveguide and the microresonator is equal

to or less than 250 nanometers; (c) an LED disposed above the microresonator and that the LED emits light at a wavelength that is less than 900 nanometers; (d) a film disposed between the patterned waveguide and the microresonator, the film having a thickness to adjust an amount of coupling between the patterned waveguide and the microresonator; and (d) a CMOS circuit on the silicon substrate.

Accordingly, claim 45 and its dependent claims are believed to be allowable over Garito, LoCascio and Moulton.

Claim 57 pertains to an apparatus comprising:

*"a silicon substrate;
a microresonator disposed on the silicon substrate, the microresonator having an annular structure to recirculate light at a wavelength, the microresonator including a rare earth and one or more of silicon particles and silicon-germanium particles in an Al-SiO_x matrix; and
a patterned waveguide optically coupled with the microresonator, wherein the patterned waveguide is positioned vertically relative to the microresonator;
an LED positioned vertically relative to the microresonator to excite recirculation of light in the microresonator".*

As understood by Applicants, Garito, LoCascio and Moulton do not teach or suggest these limitations. In particular, Garito, LoCascio and Moulton do not teach or suggest in combination with the other claim limitations: (a) a microresonator including a rare earth and one or more of silicon particles and silicon-germanium particles in an Al-SiO_x matrix; (b) a patterned waveguide positioned vertically relative to the microresonator; and (c) an LED positioned vertically relative to the microresonator.

Accordingly, claim 57 and its dependent claims are believed to be allowable over Garito, LoCascio and Moulton.

35 U.S.C. §103(a) Rejection – Garito and LoCascio

The Examiner has rejected claims 44 and 52 under 35 U.S.C. §103(a) as being unpatentable over Garito, LoCascio and Moulton, and further in view of U.S. Patent 6, 236,060 to Chan (hereinafter “Chan”). The Applicants respectfully submit that the present claims are allowable over Garito, LoCascio, Moulton, and Chan.

As discussed above, Garito, LoCascio, and Moulton do not teach or suggest the limitations of the independent claims. Chan does not appear to remedy what is missing from Garito, LoCascio, and Moulton. Accordingly, the present claims are believed to be allowable over Garito, LoCascio, Moulton and Chan, which combination does not seem to even be appropriate.

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Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the cited art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 3/12/07

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